

INTRODUCTION

Communities are social entities that function within an economic framework. A significant indicator of their vitality and cohesion is the way in which the community is designed - its physical layout. While the physical environment alone cannot create a sense of community, a poor physical setting can diminish opportunities for social contacts and fail to create a strong sense of belonging to a specific place. Enhancing the quality of new developments and community settings requires planning policies that rely on critical observation and an evaluation of how well various models of community design for suburban areas have worked as total environments.

Development in Loudoun County from 1960 to the present tends to follow a set of 20th century American planning conventions that developed after World War II. This pattern of development has produced mixed social and transportation results. Post-World War II suburban design focuses on reaching destinations by automobile, almost to the exclusion of the natural environment, the pedestrian, or the community as a whole. The solutions created by this type of design are usually satisfactory in terms of the single office building, the individual house, or an isolated library or church. However, the overall community effect cannot compare in visual coherence or efficiency with those of the traditional town patterns developed in Loudoun County prior to World War II.

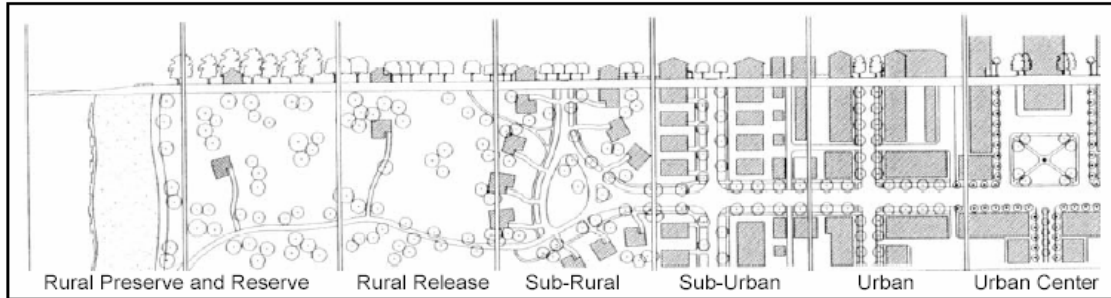
The central issue of community design is therefore a question of the appropriate relationships between structures and outdoor spaces and human movement among these man-made and natural features. The patterns of mixed use development and the integration of the automobile into the fabric of urban settlement are important issues that Loudoun County must address as it seeks to renew the vibrant and effective mixed-use, pedestrian-friendly settlements of its past by adapting this tradition to accommodate contemporary conveniences such as cars and utilities.

The central premise in this design approach is a focus on designing communities rather than individual structures or groups of structures. Therefore, the County strongly encourages that any development, which occurs, be designed with the essential mixed-use characteristics of Loudoun's historic settlement patterns.

The Community Design Guidelines, which follow, are intended to provide some guidance to land planners and designers to assist them in implementing the policies contained within the Countywide Plan. They are not to be considered regulatory requirements, but rather, design guidelines, which are to be viewed as flexible and fluid. As such, the requisite public hearing and enactment process must be followed before they can be used as regulatory requirements.

RURAL TO URBAN TRANSECT

A Land Use Transect is a natural ordering of land use from the most rural areas (i.e., Preserve or Conservation) to an Urban Center. The premise is that every element finds its place along the transect. The elements are inclusive of such things as, but not limited to, building materials; lot layouts; street design; and landscaping. For example, wooden buildings are more rural than masonry, a curb more urban than a swale, an allee of trees more urban than a cluster, deep setbacks more rural than shallow setbacks. The Land Use Transect when broken down forms the backbone of the general zoning districts (i.e., Resource Conservation – Rural Preserve; Agricultural – Rural Reserve; Residential – Sub Rural & Sub Urban; Commercial and Industrial – Sub Urban and Urban; Mixed Use – Urban Center)



Rural

Less Density
Primarily Residential
Detached Buildings
Deflected Axes
Wooden Buildings
Wood Fences
Roads and Lanes
Paths and Trails
Parks and Meadows
Pitched Roofs
Open Swales
Deep Setbacks
Trees Clustered

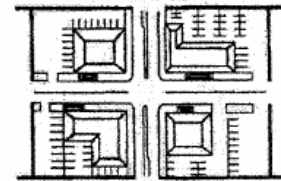
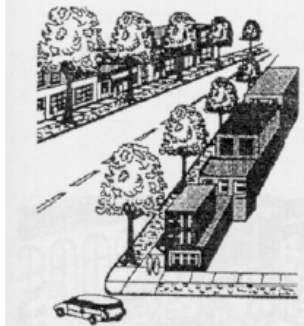
Urban

More Density
Primarily Mixed Use
Attached Buildings
Terminating Vistas
Masonry Buildings
Stone/Brick Streetwalls
Streets and Alleys
Sidewalks/Passages
Plazas and Squares
Flat Roofs
Raised Curbs
Shallow Setbacks
Trees in Grates

RESIDENTIAL COMMUNITIES

GENERAL DESCRIPTION

Residential Communities will generally be designed in a rectilinear or curvilinear pattern of blocks and/or interconnecting streets. Such streets are to be bordered by buildings and equipped with street trees, lighting and other street furniture so as to create distinct public places that are comfortably and equally shared by pedestrians, bicyclists, and slowly moving cars.



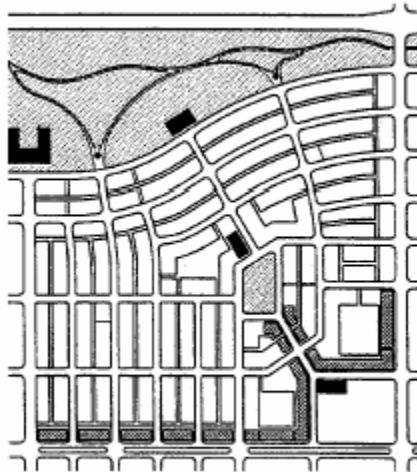
Residential Communities should have a peaceful character suitable for private domestic life, for recreational activities, and neighborhood social gatherings. Residential neighborhood structures and facilities, while providing for a wide spectrum of housing types as well as civic, educational, recreational, and commercial use, maintain an intimate, domestic scale and should be designed to maximize privacy within residences and rear yards and to foster small group interaction within the hierarchy of communal vest pocket squares and greens distributed throughout the neighborhood. Alternative driveway surfaces and shared driveways that connect two or more homes together are encouraged in all subdivisions to reduce overall lot imperviousness.



SITE PLANNING CONSIDERATIONS

As new residential communities develop in designated **Growth Areas**, the County strongly recommends that they adhere to the design guidelines specified below. The County's major objectives for encouraging the creation of such *Residential Communities* include:

- The creation of a strong sense of community identity based upon a shared, coherent, and functionally efficient environment and shared economic, political, social, and cultural influences;
- The creation of an area where dwellings, shops, and workplaces may generally be located in close proximity to each other;
- The promotion of interconnecting streets arranged in a generally rectilinear block pattern to provide comprehensible and interesting routes of travel;



- The provision of a street network which creates a balanced mix of both pedestrians and automobiles, with flexible designs for residential sidewalks including the substitution of appropriately functional path systems for sidewalks and the consideration of sidewalks on one or both sides of a residential street depending on subdivision design, connectivity and safety issues.



- The creation of well-configured squares, greens, landscaped streets, and parks woven into the pattern of the town center and dedicated to collective social activity, recreation, and visual enjoyment; and



- The creation of civic buildings for assembly, or for other civic purposes, that acts as landmarks, symbols, and activity centers for community identity.

SCALE

The scale of each *Residential Community* shall correspond to the appropriate density and mix of uses as delineated by the following *Land Use* designations.

Low-Density Residential Neighborhoods

Intended to provide for residential areas having densities ranging between a minimum of one and a maximum four dwelling units per acre.

Medium-Density Residential Neighborhoods

Intended to provide for residential areas that have been designated for development at residential densities ranging between a minimum of five and a maximum of ten dwelling units per acre.

High-Density Residential Neighborhoods

Intended to provide for a compatible mixture of commercial, cultural, institutional, governmental, and residential uses (i.e., densities exceeding ten dwelling units per acre) in compact, pedestrian-oriented, traditional town centers serving as focal points for substantial residential areas.

LAND USE ARRANGEMENT

It is intended that a mix of land uses be located in these new *Residential Communities*. In addition to a variety of residential uses and types, an assortment of domestic and supporting land uses such as day care, personal services, or local recreation should also be prevalent in these *Residential Communities*. Other civic, commercial, and employment uses may also occur in Residential Communities, as part of an overall neighborhood commercial component. These different uses should however, be combined in logical and harmonious ways. Thus, a day care center might be considered as a transitional use between a small-scale office complex and an area of residential uses.

For reasons of community harmony and visual compatibility, like uses generally should front one another across secondary collector and local access streets while compatible uses may be placed on adjoining lots along these streets. Should other considerations cause the fronting of unlike uses, every effort should be made to maintain a similarity of building mass, scale, window and door openings, and detail. In short, different and even disparate uses may and should be harmoniously located within any residential neighborhood and even within the individual block.

Block Design

Rectangular blocks should be the main organizing design feature of individual lots in all *Residential Communities*. While topography, vegetation, hydrology, proposed use, and design intentions will ultimately determine block size; *Residential Communities* generally have small block widths and lengths. An exception to this rule may apply to those blocks on the edge of a community where a low-density, *country* effect is sought. Although considerable design freedom is granted in the design of blocks, blocks not exceeding 400 feet in length best encourage pedestrian movement.

Lot, Yard, and Build to Lines

Loudoun County supports relaxing side yard setbacks and allowing narrower frontages to reduce total road length in a community and overall site imperviousness as well as relaxing front yard setback requirements to minimize driveway lengths and reduce overall lot imperviousness.



The shape of residential neighborhood lots is normally determined by environmental factors, proposed use, and design intentions. Side yards provide little useable family outdoor recreation space while generating the need for additional, costly road and utility construction while rectangular rear yards generally provide the most effective space for family activities.

Thus, neighborhood lots should generally reduce front and side yards to the minimum needed for health and safety reasons and strive to provide effective and usable rear yards (i.e., unobstructed rectangular area of 500 square feet and with a minimum dimension of 20 feet in single-family detached lots and with a minimum dimension of 16 feet in townhouse lots).

Loudoun County supports:

- Side yard setbacks based on fire code requirements.
- Front setbacks for front-loaded lots (driveways and garages at front of lot) to be 20—25 feet from the back edge of sidewalk (garage setback).
- The reduction in front setbacks for lots that are not front-loaded provided sufficient area is planned for required utility easements.
- Waiving lot frontage requirements on private streets provided there is a homeowner's association agreement in place.
- Allowing town homes to front on public roads (not just private roads).

BUILDING SITING AND DESIGN

RESIDENTIAL BUILDING ENTRIES

In all cases, primary residential entrances should orient to the street, rather than to interior blocks or parking lots. However, where higher densities are permitted, secondary and upper-floor entries will be allowed from the interior of a block.

COMMERCIAL BUILDING ENTRIES

In those cases where commercial uses are permitted, primary ground floor commercial building entrances must orient to streets, not to interior blocks or parking lots. Secondary entrances from the interior of a block will be allowed. Anchor retail buildings may have their entries from off-street parking lots, however, on-street entries are strongly encouraged.

BUILDING FACADES

Building facades are to be varied and articulated to provide visual interest to pedestrians. Arcades, porches, bays, and balconies are encouraged. In no case is the facade of a building to consist of an unarticulated blank wall or an unbroken series of garage doors. Building materials will clearly convey durability and permanence and be suitable to the climate of Loudoun County.

OPEN SPACE DESIGN

It is essential that a hierarchical assortment of open space be located throughout the *Residential Community*. A minimum of two small open areas is generally to be located within 600 feet of 80% of the single-family detached houses in residential areas. These areas should be generally flat and well drained and have a minimum size of 10,000 square feet and be a place for children to run, play tag/frisbee, and other games not possible in residential yards. These pocket parks will contribute to a sense of spaciousness within the neighborhood. Neighborhood, community, district, and county parks will generally be located between residential neighborhoods and between communities and will generally be reached by car by means of primary or secondary collector roads and on foot by means of local access streets and/or paths. While topography, vegetation, hydrology, proposed use, and design intentions will determine the location of playing fields and placement of community centers, bleachers and other structures in these parks, significant park buildings should generally be located along and be very visible from the secondary collector roads linking neighborhoods, town and urban centers and should be near to the areas served.

DESIGN OF CIVIC AND COMMUNAL USES

Civic and communal uses are to be designed so as to be recognized as the major landmarks of a community. Though the occupants of these uses may not be able to afford "top sales dollar" which such a prominent site might otherwise command, every attempt should be made to provide civic and communal uses with highly visible locations, such as at the termination of a vista or at a prominent location around a square. Furthermore, civic or communal structures are to be generally located along the collector road or street, closely integrated within the community fabric. In short, such uses are to be featured and not lost within a sea of parking on some inconsequential side street of a community. Parking for civic and communal uses should either be provided as parallel parking along the street or behind the use at mid-block. Since users of these buildings frequently arrive after the conclusion of the working day or on the weekend, shared parking agreements with nearby office or commercial developments may be achieved, thereby reducing required lot size and making the communal project more affordable.



Criteria For Locating Public/Civic Use Sites

The site should be located in an area where the greatest percentage of people will be making stops most frequently, allow for adequate parking and setbacks, as well as for building and parking expansion. The site should offer easy and safe vehicular and pedestrian access and should be highly visible. The surrounding land use should be consistent with the public/civic use in terms of function, peak use times, and traffic patterns. For example, peak usage for public libraries coincides with retail, with the exception of heavier public library use in morning hours by seniors and preschoolers. In addition to precautions that will be planned for the interior of the building, the site itself should provide a high degree of personal safety for people entering and leaving the building, especially at night. Physical characteristics of a site may impact both construction costs and building size. The topography of the site, therefore, should offer optimum space utilization. The site should be easily accessible for public and private transportation services.

DESIGN OF RETAIL AND SERVICE USES

These uses, where permitted in residential communities, will be limited to the types and scales designed to serve primarily the convenience needs of the resident population of the *Residential Community*. Total land area devoted to such uses should not exceed 3 percent of the total land area of the residential neighborhood, whether located in a planned shopping center or a convenience establishment.

Planned Shopping Centers:

These uses may generally be permissible, provided that:

- First floor uses are restricted to commercial, personal service, and finance establishments;
- The location of the shopping center will have direct access to arterial or collector streets without creating through traffic on local streets in residential neighborhoods, causing traffic hazards or congestion, or impeding free traffic flow;
- Layout of parking and service areas, access, landscaping, yards, courts, walls, signs and lighting, and control of noise and other potentially adverse influences will be such as to protect the residential character of the surrounding or nearby residential neighborhood; and
- Non-vehicular open space is to be landscaped or otherwise appropriately improved and located for general amenity to provide buffering, convenient pedestrian circulation, and/or passive recreation areas.

Convenience Establishments:

Convenience establishments are usually small establishments designed and intended to serve the daily or frequent trade or service needs of the immediately surrounding population. Such establishments may include groceries, variety stores, drug stores, coin-operated laundry and dry cleaning agencies, tailoring and dressmaking shops, beauty shops, barber shops, medical and dental offices, and similar small-scale uses. Specifically excluded are automobile filling stations and repair garages and drive-in eating and drinking establishments. Convenience establishments will be located only in portions of *Residential Communities*:

- Not served by similar facilities within a reasonable walking distance (i.e., <1,500 feet); and
- With dwelling unit densities of at least six units per net acre so located as to provide substantial walk-in trade.

Where more than one establishment of this nature is proposed, they will be grouped, arranged, and designed for maximum pedestrian convenience. Vehicular access and parking areas will be combined where it will result in substantial improvement in public convenience and improvement of circulation. Convenience establishments will not be permitted to have substantial adverse effects on any adjoining or nearby residential uses by reason of their location, design, construction, manner or timing of operation, signage, lighting, parking or access arrangements or other characteristics. Landscaped open space will be utilized to protect the residential character of the neighborhood. No convenience establishment or group of establishments will be of such size or character as to create the impression of general commercial development.

Therefore, in addition to other limitations designed to achieve these ends and in an attempt to minimize the number of such establishments, no individual convenience will be permitted to exceed a gross floor area in excess of 5,000 square feet, and no combination of such establishments in any one location is to have a total gross floor area of more than 10,000 square feet. Lot coverage by all buildings generally will not exceed 30% of the net area of the lot or building site.

Open Space:

Non-vehicular open space equal to at least 15% of the net area of the site devoted to retail and/or service uses, exclusive of adjoining streets, will be provided. Such space will be landscaped or otherwise appropriately improved for general amenity to provide convenient pedestrian circulation, play areas for children, and/or passive recreation areas.

DESIGN OF OFFICE AND INDUSTRIAL USES

These uses, if permitted in *residential communities*, will be of a type and scale that are compatible with the residential development, and provide employment opportunities in a reasonable relationship to the resident labor force. Generally:

- The total land area devoted to such uses is not to exceed 15 percent of the total land area of the *Residential Community* and no industrial park will be less than 10 acres in size.
- The total office floor space or total industrial floor space will not generally exceed 100 square feet per dwelling unit.
- Accessory retail and service uses may be provided within office and industrial buildings in an amount not to exceed five percent of total office or industrial floor space.

ROAD, STREET, AND ALLEY DESIGN

In a Residential Community every effort should be made to render all rights-of-way attractive. However, secondary collector and local access streets are to be considered the main public thoroughfares of a community and should be designed to accommodate a number of specific, interactive functions, such as:

- Pedestrian, bicycle, and vehicular movement, daytime parking of cars;
- Foreground and entryway into private residences, communal and public buildings; and interactive social space.

To achieve these functions, streets are to be designed as a network of defined spaces surrounding blocks. Each street should be further designed as a set of carefully graduated zones that provide for:

1. A zone of moving vehicles;
2. A buffer zone of street trees, planting and parked cars;
3. A pedestrian movement and meeting zone; and
4. A zone of privacy near the entry and ground floor windows of residential buildings or an "eddy" area adjacent to commercial buildings.

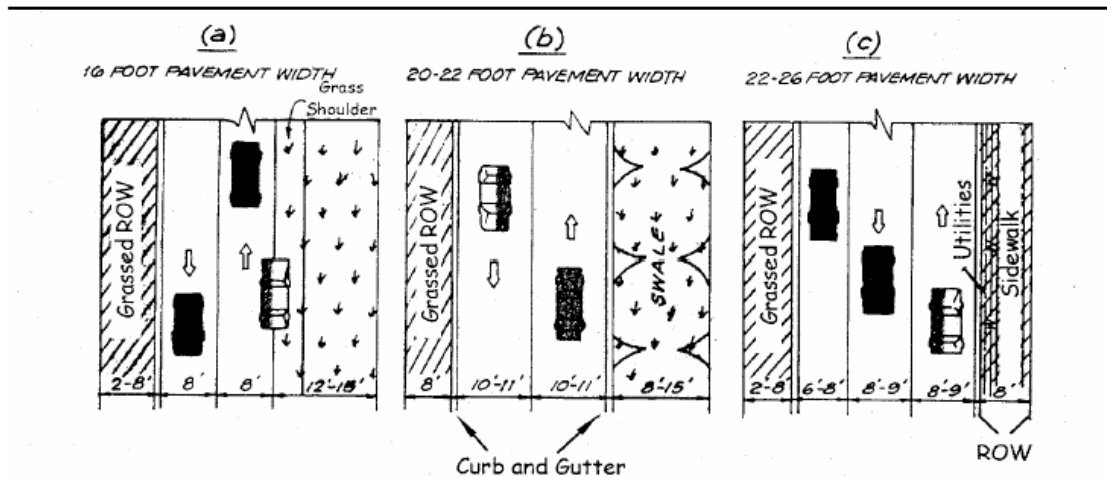
In order to define the street space, buildings facing each other across the street will generally be placed no more than three or four times their height apart and should usually be placed much closer, while spatial definition will be reinforced with the regular planting of street trees chosen to develop an overhead leaf canopy.

Further street definition is to be sought by emphasizing block corners with street lights, while the vista at the end of the street should generally terminate with a centrally placed building facade, such as a major house or civic building, an archway into a neighborhood green, a church spire, or a monument.

RESIDENTIAL STREET DESIGN STANDARDS

STREET TYPE number of du's design speed	TWO WAY WITH CURBS 60 feet R/W unless otherwise specified				
	LANE < 7 10 mph	COURT 7-14 10 mph	WAY 15-30 15 mph	MINOR STREET 31-115 20 mph	MAJOR STREET 116-160 25 mph
street frontage abutting lots 120 ft or more	40 ft R/W 14 ft	44 ft R/W 16 ft	44 ft R/W 17 ft	 19 ft	 21 ft
90-119 feet	44 ft R/W 16 ft	 22 ft	 23 ft	 25 ft	 27 ft
60-89 feet	 18 ft	 23 ft	 24 ft	 26 ft	 28 ft
less than 60 feet	 26 ft	 31 ft	 32 ft	 34 ft	 36 ft
no lots taking direct access	 16/18 ft*	 18/21 ft*	 19/22 ft*	 20/24 ft*	 21/24 ft*

Figure 3.2: Potential Design Options for Narrower ROW on Residential Streets (Schueler, 1995)



RESIDENTIAL STREET DESIGN PRINCIPLES

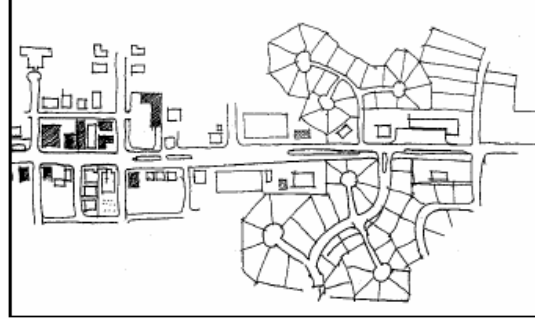
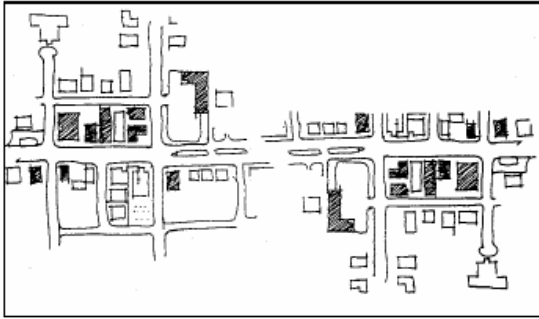
1. Residential streets should be designed for the minimum required pavement width needed to support travel lanes, on-street parking, as well as emergency, maintenance, and service vehicles.



2. Visibility at intersections should be designed to minimize emergency response difficulties and enhance pedestrian movement. Street trees and landscaping should be kept 15-20 feet from the intersection. The use of bulb-outs is encouraged to prevent parking immediately at an intersection while providing a safer pedestrian movement across the roadway. Rear alleys are encouraged. Traffic calming techniques should be incorporated into site design to provide aesthetic value and operational improvements.
3. Connectivity and the reduction of total length of residential streets should be achieved through the examination of alternative street layouts, shorter block lengths (e.g. <300 ft), and the restriction of dead-end streets. Sound planning principles of neighborhood connectivity must be achieved with innovative subdivision street design.
4. Residential street right-of-way (ROW) widths should reflect the minimum required to accommodate the travel way, the sidewalk, and vegetated open channels. Utilities and storm drains will be located within the pavement section of the ROW where feasible. If the ROW needs to be expanded to accommodate utilities or a wider street section, building setbacks may be relaxed.



5. Loudoun County encourages the minimization of the number of residential street cul-de-sacs and supports the incorporation of landscaped areas in them to reduce their impervious cover. The radius of cul-de-sacs will be the minimum required to accommodate emergency and maintenance vehicles. Alternative turnarounds (Loop-de-Lanes---horseshoe shaped turnarounds with vegetated center; Hammerheads---T-turnarounds) will be evaluated and considered in the design stage of a development.



- Loudoun County encourages the use of vegetated open channels in the street ROW, where density, topography, soils and slope permit, to convey and treat stormwater runoff.



GENERAL PARKING GUIDELINES

Parking in *Residential Communities* may be provided in one or more of the following ways:

- At the rear of residential lots and reached by means of alleys;
- Continuous parallel parking provided in the street at the front of residential lots; and/or
- A maximum of two spaces located within the required front yard of any residential lot.



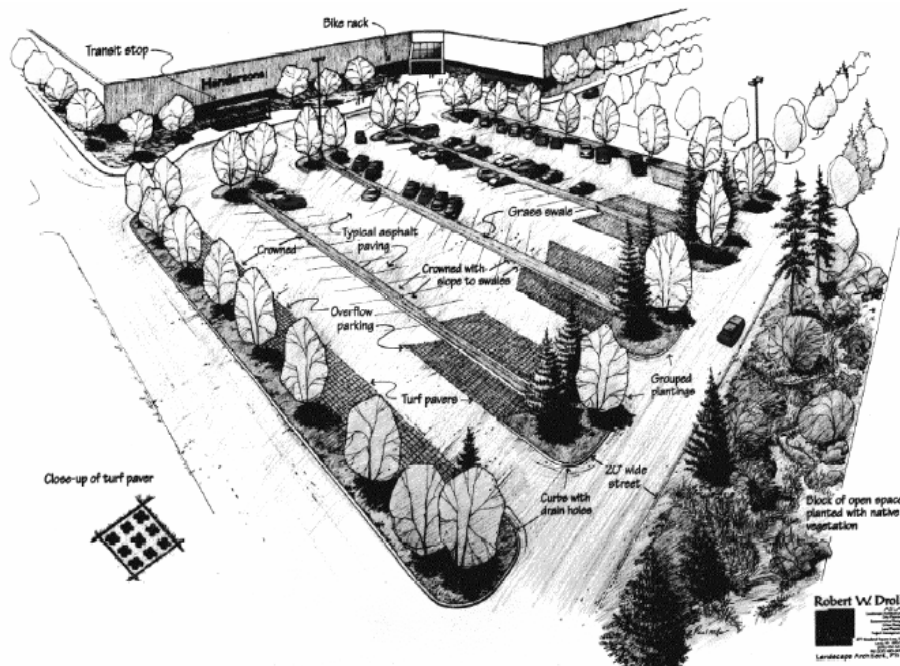
Parking for any permitted non-residential, civic, commercial, employment, and/or recreational uses located in the Residential Communities should be provided in the middle of blocks and reached by means of alleys, and/or provided by continuous on-street parallel parking, or provided on the perimeter of the neighborhood and reached by secondary collector roads. In no case

should parking lots occupy significant frontage along Residential Community streets. Parking space requirements may be relaxed in those instances of mixed employment, commercial, and residential uses, in which case, the time-sharing of a parking space is feasible.



High quality parking design will include advanced and innovative location/lay-out schemes and address the pedestrian access component of development.

The required parking ratio governing a particular land use or activity should be enforced as a median of national standards in order to curb excess parking space construction. In most cases, parking ratios result in far more spaces than actually required because ratios are typically set as minimums and not maximums—builders and developers are free to provide excess parking. As a result, parking lots are often fully utilized for a few hours each year. During off-peak periods, a significant number of most parking spaces are empty. Excess parking increases impervious cover and leads to greater construction and maintenance costs. Stormwater runoff also increases which leads to higher stormwater management costs.



Parking ratios will be based on actual parking demand. Parking spaces above and below a national median requirement should be allowed provided the developer submits data—e.g., an actual parking demand study that warrants the increase or decrease in the number of parking spaces.

Loudoun County will consider allowing developers to 'ghost-in' additional parking space construction. In the future, if demand requires it, the land owner/developer will be able to increase the size of parking lots without going through the entire planning approval process. In these cases, stormwater management will be designed for the maximum possible impervious surface.

Reduction in parking requirements will be allowed where mass transit is available.

The County encourages shared parking and other options to facilitate this condition when a new development adjoins an existing development.

The provision of compact car spaces, the minimization of stall dimensions, the incorporation of efficient parking lanes and the use of pervious materials in spillover parking areas will be incorporated into the plan review phase of land development in order to reduce the overall imperviousness associated with parking lots. This can be achieved by:

- Reducing the parking stall dimension requirement to 9 ft. by 18 ft.
- Incorporating and labeling compact car spaces (8.5ft by 16 ft) into a development as a certain percentage of the total parking spaces---generally 15-25%
- Considering reduced parking stall dimension requirement (8.5 ft by 16 ft) for long term (employee) parking for certain uses

Wherever possible, stormwater treatment for parking lot runoff will be provided using bioretention areas, filter strips, and/or other practices that can be integrated into required landscaping areas and traffic islands.



Reduction in imperviousness may also be achieved by using alternative paving materials such as grass-create which allows for a stabilized, yet pervious material for water to seep into the ground rather than produce more run-off.

MAINTENANCE

1. The owner or his agent shall be responsible for the maintenance, repair, and replacement of all landscaping materials and barriers as may be required.
2. All plant material shall be tended and maintained in a healthy growing condition, replaced when necessary, and kept free of refuse and debris.
3. Fences and walls shall be maintained in good repair. Openings within the barriers may be required for accessibility to an area for necessary maintenance.

BOND/CASH ESCROW REQUIREMENTS

No landscape plan shall be approved until the applicant has posted an acceptable guarantee to the County, conditioned upon the satisfactory installation of the landscaping proposed in his landscaping plan.

COMMERCIAL SHOPPING CENTERS

GENERAL DESCRIPTION

These shopping centers should be designed to serve areas not already conveniently and adequately provided with commercial and service facilities of the kind proposed. These areas are intended to permit the establishment of planned centers with carefully organized buildings, service areas, parking, and landscaped open space which clearly serve a demonstrated public need, reduce marginal traffic friction below that would result from strip commercial development, and protect property values in surrounding neighborhoods. It is further intended that those areas identified as *Commercial Shopping Centers* should provide a broad range of commercial facilities and services appropriate to the general needs of the area served.

SITE PLANNING STANDARDS

Building Placement And Design

Scale, materials and architectural treatment should harmonize with nearby residential structures.

Natural drainage features such as swales and ponds should be conserved to the greatest extent possible.

Building lengths in *strip* and *L-centers* should generally not exceed 500 feet, while a lesser dimension is preferable.

Traffic Access, Circulation, Parking and Loading

Neighborhood Shopping Centers may function adequately with only one point of access to an adjacent street. *Community Shopping Centers* should have at least two points of access. Adequate access to *Regional Shopping Centers* must be determined on a case-by-case basis, depending upon the location and transportation system(s) which are or may be planned for a particular area.

Entrances and exits should be located opposite or at least 250 feet from the nearest road intersections.

No structures or landscaping should obstruct sight distances from access points.

The site's vehicular and pedestrian circulation patterns should be separated where appropriate. For *Neighborhood Shopping Centers*, no more than four rows of parking spaces should be located in front of the stores in order to reduce the visual impact of parked autos and allow clear

visibility of the shopping area. Generally, parking spaces should be located within 350 feet of the stores.



Drive-in window facilities for banks and restaurants should be placed in a manner that will accommodate a minimum queue of 5 vehicles. Such queue should not block parking spaces, access or circulation lanes.

Truck loading and maneuvering areas should not conflict with or block pedestrian or vehicular access points or patron parking areas.

The interior circulation pattern should permit vehicular circulation to all parts of the site without forcing traffic onto the adjacent public road(s).

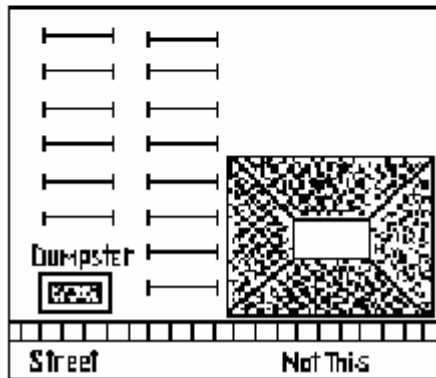
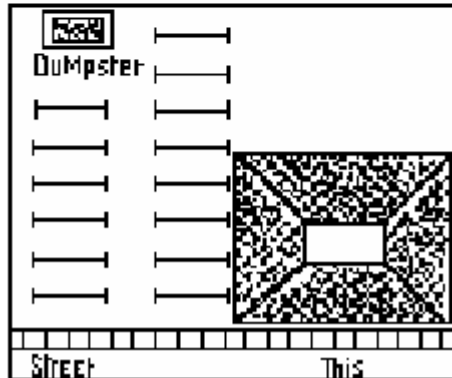
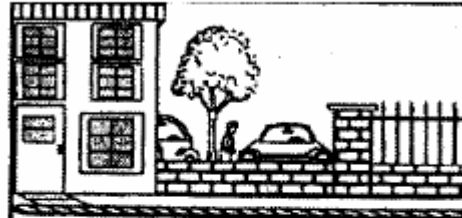
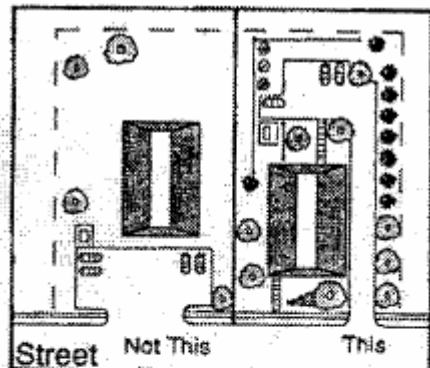
Landscaping And Buffering

Natural site environmental features such as hedgerows, mature trees (i.e., trees with a *diameter-at-breast-height* [*D.B.H.*] of 6 inches or more) and naturally occurring earthen berms should be integrated into the site's landscape plan. Parking areas should be visually screened from adjacent streets and residential areas by depressing the parking areas several feet and/or by construction of earthen berms.

Parking areas should include landscaped tree and hedge areas of an extent to shade the parking areas, thereby reducing the thermal and micro-climatic effects that may result from large expanses of pavement.



All loading and storage areas should be screened from adjacent residential areas by earthen berms, masonry walls, permanent wooden fencing, and/or dense landscaping.



The perimeter of all shopping centers should be landscaped with deciduous street trees along road frontages and opaque evergreen coniferous trees and hedges adjacent to residential areas.

Parking areas should not extend to the adjacent sidewalks. It would be preferable to have a minimum of a fifteen-foot green area separating the parking areas from sidewalks or adjacent streets in order to absorb stormwater runoff and eliminate blockage of pedestrian access ways.



Required drainage and stormwater management facilities such as holding basins, drainage swales, and culverts should be incorporated into the overall landscape design for the shopping center.

Signs And Lighting

Signs for shopping centers should be developed as an integral part of the overall shopping center design. Graphics and support structures should be harmonious in style and material with adjacent residential land uses.

Identification signs should not exceed the height of adjacent buildings.

Parking lot lights should be directed away from nearby residential areas and should be designed to be compatible with residential uses in terms of height, brilliancy, form, texture, and character.

The height of parking lot lights will be reviewed on a case by case basis during site plan review, in general the planning commission will permit lights to be no taller than 15 feet high. The planning commission will consider during site plan review, on a case-by-case basis, deviations from this standard. Cut-offs should be provided for to reduce "light pollution" and illumination beyond the intended area. Freestanding lights should be located where there are no trees that will grow to block the light.

VILLAGE COMMERCIAL CENTERS

GENERAL DESCRIPTION

Village commercial centers which are proposed within established communities, such as Arcola are intended to provide a place where a variety of small-scale commercial uses and a range of housing unit types may be permitted. It is a place where people who reside there and in the adjoining residential neighborhoods can get a gallon of milk, perhaps drop off their dry cleaning, and get some gas on the way home from work. It is where people can walk on Sunday morning to get their newspaper or where people come to meet at the community center while children play at the community park.

SCALE

A *Village Commercial Center* should provide uses that can survive on the market found within the adjoining residential neighborhoods. *Village Commercial Centers* should not attempt to attract traffic from outside the neighborhood. The commercial square footage should be based on the number of dwellings within a convenient walking distance (i.e., approximately 1,500 feet). Individual businesses within a *Village Commercial Center* should not exceed 5,000 square feet in floor area.

LAND USE ARRANGEMENT

An area proposed for a *Village Commercial Center* should be located along a minor collector road, suited for on-street parking that serves as the spine road for adjoining residential neighborhoods. It should be separated from larger collector roads or arterials to minimize the amount of external traffic that might be attracted to the *Center*. It should be located so that it is easily accessible to most residents. In general, a *Village Commercial Center* should consist of several small businesses and a mixture of dwelling units types (i.e., large and small lot single-family detached, two-family dwellings, and multiple family units on the second and/or third floors above the ground level commercial uses). In addition, this limited commercial/residential mix should be combined with civic uses such as a church or community center and a community park. This combination of uses is intended to give the area an identity and vibrancy that adds to the character of the surrounding residential neighborhood. Civic uses and parks or greens should be recognized as major landmarks. From a distance, civic buildings should be the focus of attention while walking or driving to the *Village Commercial Center*. Parks and greens should serve as a visual attraction, a buffer for nearby residential uses, and as a community recreation facility.

STREETSCAPE

The *Village Commercial Center* should include buildings which are between one and three stories in height to provide a sense of enclosure for pedestrians. Structures should abut the sidewalk with parking to the side or rear of the lot. Parking areas should be landscaped with a substantial canopy cover. Parking on the street should meet the short-term needs of customers. Such convenience parking should be accomplished through on-street parking and parking at the side of structures.

Parking lots should not create long expanses of empty street frontage. Parking should be the minimum permitted by the County because most customers are stopping only for a few minutes at a time. Shared parking is strongly encouraged. Sidewalks should be wider throughout the *Village Commercial Center* to accommodate benches, parking for bikes and strollers, planters, and other amenities.



Individual lots should be narrow and the distance between buildings minimized to reduce the walking distance through the *Village Commercial Center* and to increase the visual enjoyment of pedestrians and motorists. As such, there will be little need for freestanding signs of any height and therefore such signs are strongly discouraged.

OFFICE/RESEARCH

GENERAL DESCRIPTION

Office/Research developments should consist of a mix of certain types of residential uses, administrative, business, and professional offices and necessary supporting accessory uses and facilities designed with an environmental sensitivity to accommodate and complement existing natural features. They include extensive landscaping, low ground coverage by buildings, buildings of moderate height, and careful attention to such aesthetic considerations as location and size of signs, lighting, parking, and service areas.

SITE PLANNING STANDARDS

Setbacks

No portion of any building should be erected further than 25 feet to any public street. No off-street parking areas should be permitted within the front yard. At least two-thirds of the area of yards thus provided should be in landscaped open space. No driveway, off-street parking, or loading area should be closer to the residential district boundary than 50 feet.

Yards

Where individual lots or building sites are provided for lease or sale, the minimum distance between buildings on adjacent lots or building sites should be no less than 25 feet. Covered walkways connecting buildings or connecting buildings with parking areas will be permissible in any yard. Where there is more than one building on an individual lot or building site, spacing between the buildings as required for fire protection should be provided.

Impervious Surfaces

In general, no more than 30% of any *Office/Research* development should be covered with impervious surfaces (i.e., buildings, parking lots, but excluding roadways).

Building Height

Generally, no building within an *Office/Research* development should exceed 60 feet.

Landscaped Open Space

The minimum amount of landscaped open space on any individual lot should not be less than 40%. Such open space should generally not be open to vehicles and should be landscaped and maintained in a manner appropriate to the park-like character of the development.

Utility Requirements

All utility lines located within an *Office/Research* development should be placed underground.

Outdoor Storage

No storage of any kind should be permitted within the front yard of any lot. Generally, outdoor storage of materials, equipment, and vehicles should be permitted only within enclosed areas that are composed of masonry walls, plantings, or similar suitable materials.

Loading Areas

All loading areas should be placed at the rear or the side of the building. These areas should be visually screened from the view of any adjoining property that is not being used in a similar nonresidential nature and from public streets.

TELECOMMUNICATIONS FACILITIES

BACKGROUND

There are currently numerous commercial public telecommunication antenna sites in Loudoun County. Changes in commercial public telecommunication demand and technology have caused a great demand for additional antenna mounting facilities, mostly in the form of lattice towers and monopoles. The increased demand for these facilities poses a number of important land use issues for Loudoun County including facilitating collocation of antennas, ensuring appropriate siting and design, and mitigating impacts of telecommunication facilities.

The design guidelines described below will be used as a guide for County actions with regard to telecommunication service within the Route 50 corridor.

General Design Guidelines

Due to their reduced visual impacts, when technologically and physically feasible, monopoles are the preferred design.

Tower and/or monopole sites should be designed and constructed to the minimum height necessary to accommodate at least three providers on the tower or monopole and provide sufficient land area for additional equipment buildings unless doing so would:

- Create an unnecessary visual impact on the surrounding area;
- No additional need is anticipated for any other potential user in this area; or
- There is some valid technological or physical justification as to why collocation is not possible.

The visual impact of commercial public telecommunication facilities should be mitigated so as to blend with the natural and built environment of the surrounding area.

The specific communication facility design issues that should be examined in looking at visual impact are: the setting; color; lighting; topography; materials; and architecture. Towers and antennas should be neutral in color to blend with the background, unless specifically required by the Federal Aviation Administration (FAA) to be painted or lighted otherwise.

To mitigate the visual and noise impacts of new equipment buildings and accessory uses, these structures should blend in with the surrounding environment through the use of appropriate color, texture of materials, topography, scale of buildings, landscaping and visual screening.

Specific Guidelines

Public telecommunication facilities sited within the Route 50 corridor should conform to the following design guidelines:

- Monopole or tower sites should be sited within areas of existing mature vegetation so that the maximum amount of the structure and associated buildings are screened. Where a mature vegetative buffer does not exist or where topographical conditions will not contribute to the screening of such facilities, the applicant should demonstrate that there is no acceptable existing mature vegetated area nearby that could be used. In all cases, the County encourages camouflaging the facility to mitigate visual impacts.
- Monopoles or tower sites should not be sited along ridge lines but down slope from the top of the ridge lines to protect the viewsheds associated with the mountain ridges visible from portions of the Route 50 corridor, particularly the western portion of the corridor. Where a freestanding telecommunication facility needs to be placed along a ridgeline because of a valid technical or physical justification, the applicant must provide the County with a statement of justification to indicate why a more suitable down slope location is not useable; and
- Monopoles or towers should generally be sited toward the interior of a property rather than close to a property line unless a lesser visual impact would occur from an alternative location. Visual impacts should be mitigated by measures located onsite rather than relying on offsite conditions for mitigation.

Historic Areas Design Guidelines

Applicants proposing a commercial public telecommunication tower or monopole within one mile of a structure or property listed on the National Register of Historic Places or a County designated Historic Site or Structure should provide both visual impact analysis and justification why the tower or monopole could not be sited elsewhere. As part of the visual impact analysis the applicant should provide visual imagery from several different perspectives to help determine the

extent to which the facility could be designed to mitigate any potential visual impacts on the historic structure or site.

Publicly Owned or Controlled Facilities And Volunteer Fire And/Or Rescue Companies

Applicants for request to permit collocation of new commercial public telecommunication facilities on publicly owned or controlled facilities and/or facilities owned by volunteer fire and/or rescue companies should demonstrate that there will not be any physical or technological interference with the existing or planned function of the public facility or the volunteer fire and/or rescue company facility.

Landscaping and screening may be less stringent for collocation of new public telecommunication facilities at public sites or volunteer fire and/or rescue company sites where the visual impact of the support building is otherwise mitigated or is consistent with the surrounding area.

Employment or Industrial Area Design Guidelines

Commercial public telecommunication monopoles in areas planned and zoned for employment or industrial uses should locate toward the interior of the lot rather than along any common boundary with existing or planned residential areas and should mitigate visual impacts onsite rather than relying on offsite mitigation.

Within employment or industrial areas, commercial public telecommunication monopoles will be appropriately separated from residentially zoned property a sufficient distance to mitigate its impact. Along existing overhead utility transmission line rights-of-way, the required separation may be substantially reduced. Where a freestanding telecommunication facility needs to be placed in closer proximity to a residentially zoned property because of a valid technical or physical justification, the applicant must provide the County with a statement of justification to indicate why a more suitable location is not useable.

In some locations, recommended landscaping may be less stringent where the visual impact of the support buildings is otherwise mitigated or consistent with the surrounding area.

Minor and Major Arterial Road Corridors

The County may consider allowing towers or monopoles in certain County-owned and maintained major and minor arterial road corridor setback areas if the tower or monopole can be sited within an existing mature vegetation or the topographical conditions are such that the visual impact of locating a tower or monopole within the setback is less than a nearby location that adheres to the setback.

SAFETY GUIDELINES

Any site upon which a proposed tower or monopole is to be placed should be of such size and dimensions to permit the tower and/or monopole to be contained entirely within its boundaries should it collapse. If an applicant for a new freestanding telecommunications facility proposed to locate on a site on which the monopole or tower should not collapse entirely within its boundaries, the applicant should demonstrate to the satisfaction of the County that, from a structural engineering perspective, there is no reasonable risk that the structure will fall over.

Applicants for any commercial public telecommunications facility shall demonstrate to the satisfaction of the County, that they have complied with all applicable regulations of the Federal Communication Commission (FCC) and the Federal Aviation Administration (FAA). If a proposed telecommunications towers or monopole is higher than 200 feet or within five (5) miles of the Washington Dulles International Airport, the applicant will provide verification that he/she has

notified the appropriate airport authority and that the FAA has determined that the proposed facility is neither a hazard nor an obstruction to aviation.

REMOVAL OF TOWERS AND/OR MONOPOLES UPON CESSATION OF USE

An applicant or its successors shall remove all unused structures and facilities from a commercial telecommunication site, including towers and/or monopoles, within 90 days of cessation of commercial public telecommunication use or the expiration of the lease, whichever occurs first, and the site should be restored as closely as possible to its original condition.

SIGNAGE

GENERAL DESCRIPTION

The intent of the sign criteria is to establish a basis for creative, graphic identification that will enhance the individual property, the community, and the surrounding areas distinct characteristics. The guiding principle is the importance of “high quality” in relation to signage in the County. Additionally, signage should be appropriate for its setting, whether in a commercial, residential or mixed-use neighborhood setting.

The concept of “high quality” signage can be achieved through several key elements:

Size

The height of freestanding signs should be limited to the height of the primary occupied building or structure. Identification signs should not exceed the height of adjacent buildings, particularly in Neighborhood Shopping Centers. The total amount of signage for any site shall be limited to avoid unsightly clutter and promote readability. Storefront or window signage shall be included in sign calculations for an individual property.

Materials

Signs should be constructed of wood, brick, or stone and compatible with the building architecture.

Lighting

Lighting should be limited to the sign itself and not be overly bright where light may pour out beyond its intended use. The use of internally lit box signs is discouraged. Halo lit, ground lit, or externally lit with gooseneck type lighting is desired.

Color

The signs color should be harmonized with that of the building façade. The use of a “white” background is discouraged as it aids in diffusing light beyond its intended use.

Placement

Signs should not be placed in such a manner that inhibits pedestrian or vehicular movement, site distances, line of sight, and accessibility. Building signage should be so placed within a designated “sign panel”. Multi-tenant buildings should incorporate consistent sign panels within their individual storefront designs. Only one freestanding sign shall be visible from a single view shed.

GATEWAYS

Entry features into individual communities, villages, and hamlets as well as gateways into Loudoun County and individual municipalities to create a sense of place and clearly demonstrate and entry point into an area. Walls, monuments, signage and landscaping can all be combined to provide an attractive entry feature. Gateways should be developed for all site plans and submitted for review and approval by the Planning Commission.